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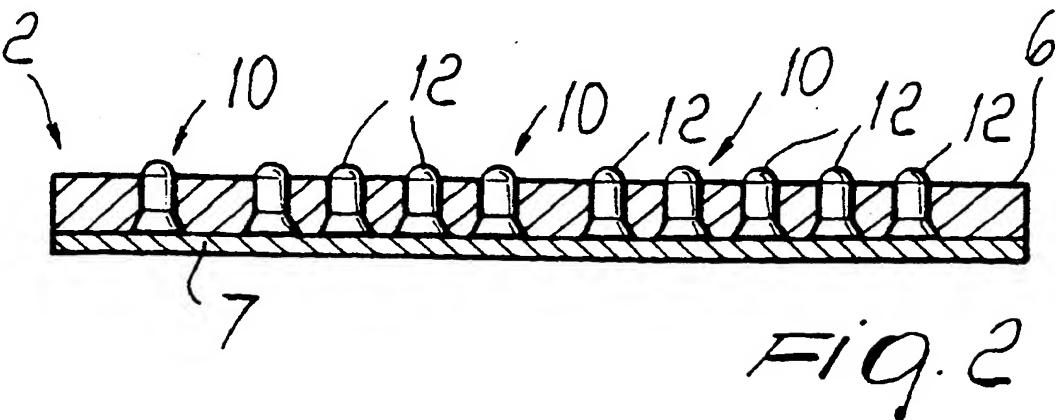
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(54) Indicator device

(57) An indicator device includes a support member (2) formed by two coupled flat panels made of metal or synthetic material, a plurality of holes formed in the exposed panel according to the pattern of Braille writing according to the characters to be represented; the holes

are engaged by pins made of synthetic material which is resistant to abrasion and to rubbing-induced wear, so that their dome-shaped rounded ends protrude from the exposed panel (6).



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Description

[0001] The present invention relates to an indicator device which is particularly but not exclusively useful for visually-impaired and blind people in order to allow them to easily identify a place, an office, a direction et cetera.

[0002] It is known that the Braille system allows blind people to read by means of an array of raised dots which symbolize alphanumeric characters. Essentially, each letter and digit is written by mechanical punching on paper or other medium at some of the nodes of a two-by-three grid. Accordingly, by composing one or more grids which are punched in a horizontal direction one obtains words, etc.. Reading is achieved by gently running one's fingertips along the resulting lines. This writing and reading system can also be applied to so-called place indicators in general and particularly to indicators of public bureaux, historical locations, hospitals and places of interest so as to enable blind people to autonomously recognize them. In the general effort of eliminating physical barriers for the benefit of the handicapped, it has been thought to associate short messages of one, or at the most two, words in Braille to traditional indications, mostly placed on signs or plates or similar media. For example, Braille strips of plastic-coated paper-like material are glued onto existing plates, signs, plaques, name plates, or similar. This solution is effective in itself, but it has the drawback that the strips deteriorate in the medium-long term, due to repeated contact, and degrade the overall aesthetic appearance of the plate. In new plates, the Braille studs are obtained by molding. A first drawback of this method is the fact that a specific mold must be provided for each plate, and if the plate is produced in a limited number of items this aspect considerably affects the retail price of the plate. A second equally important drawback is that this method is difficult to use with metals and metallic alloys such as for example aluminum, copper and zinc-aluminum-magnesium alloys and entails considerably high production costs.

[0003] An aim of the present invention is to overcome the drawbacks of the cited prior art.

[0004] An object of the invention is to provide an indicator device which can be manufactured with any type of support material at a considerably lower production cost than the conventional methods, so as to induce purchasers to buy and use the device even where it is not expressly required.

[0005] Another object of the invention is to provide an indicator device which is resistant to abrasion and rubbing-induced wear and has a pleasant appearance.

[0006] Another object of the invention is to provide an indicator device which allows to write and read any indication in Braille.

[0007] This aim, these objects and others which will become apparent hereinafter are achieved by an indicator device according to the invention, comprising a sup-

port member having a plurality of holes engaged by protruding pins which are detectable to the touch.

[0008] Further characteristics and advantages of the invention will become apparent from the description of an embodiment which is illustrated only by way of non-limitative example in the accompanying drawing, wherein:

10 Fig. 1 is a perspective view of an indicator device according to the invention;

Fig. 2 is a sectional view of the indicator device, taken along the plane II-II of Fig. 1;

15 Fig. 3 is a partially sectional detail view of the indicator device of Fig. 1.

[0009] With reference to the drawings, the indicator device, globally designated by the reference numeral 1, 20 comprises a support member 2 having a visible face 3 and provided with a conventional indication 4, for example provided by printing engraving, by means of an adhesive image, or in relief. The visible face 3 is also provided with an indication for visually-impaired and blind people, generally designated by the reference numeral 5, formed in Braille. The support member 2 comprises an upper exposed flat panel 6, preferably a metal or synthetic plate with desired characteristics in terms of rigidity and dimensional stability, which is coupled, by means for example of an adhesive, to a lower flat closure panel 7 which is optionally thinner than the upper panel 6, since it merely serves to close the upper panel. A plurality of through holes 8, that follow the pattern of Braille writing according to the alphanumeric 25 characters to be represented are provided in the upper panel 6. Holes 8 have a radial size on the order of one millimeter and end with a flared portion 9 at the interface between the two panels 6 and 7. Pins 10 are inserted in the holes 8 and are taller than the depth of the holes 8 and than the thickness of the upper panel 6. The pins 30 are formed by a cylindrical stem 11, having radial dimensions approximately equal to those of the holes 8, and which ends with a dome-shaped rounded end 12 which protrudes with respect to the exposed face 3. The stem 11 also has a cone-shaped opposite end 13 so as to adapt to the flared portion 9. Pins 10 are preferably made of a synthetic material which is particularly resistant to abrasion and to rubbing-induced wear. As an alternative, instead of the flared portion 9 there is a 35 wider cylindrical portion (not shown) which accommodates a corresponding wider cylindrical head (not shown) provided on the pin instead of the conical end 13. The method for manufacturing the indicator device 1 comprises the following steps:

55 -- providing a plurality of through holes 8 on the upper panel 6;
-- inserting a plurality of pins 10 in the through holes

8, so that the pins protrude with their rounded end 12 from the panel 6;
 -- locking the pins 10 by means of the closure panel 7, coupling it by means of adhesive to the panel 6.

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[0010] It has been found in practice that the device thus described achieves the intended aim and objects, since the indicator device for visually-impaired and blind people is handy and straightforward to identify. Furthermore, the device can be assembled with a small number of simple operations which are typical of handicraft engraving and which can be effectively automated in case of large productions. Finally, by virtue of the device it is possible to produce any indication whatsoever, so as to allow visually-impaired and blind people to be fully autonomous in recognizing places, directions, et cetera.

[0011] In practice, the materials used, as well as the dimensions, may be any according to requirements.

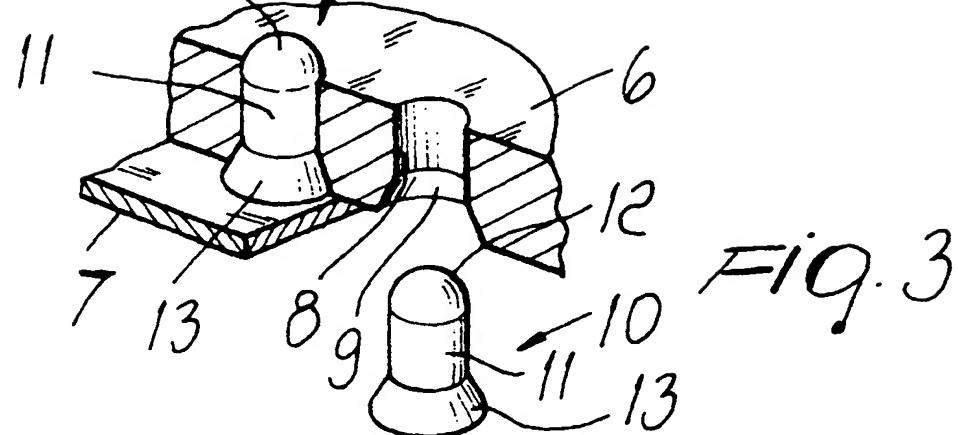
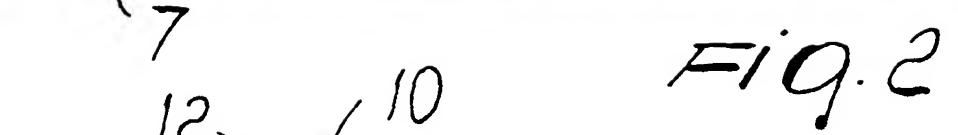
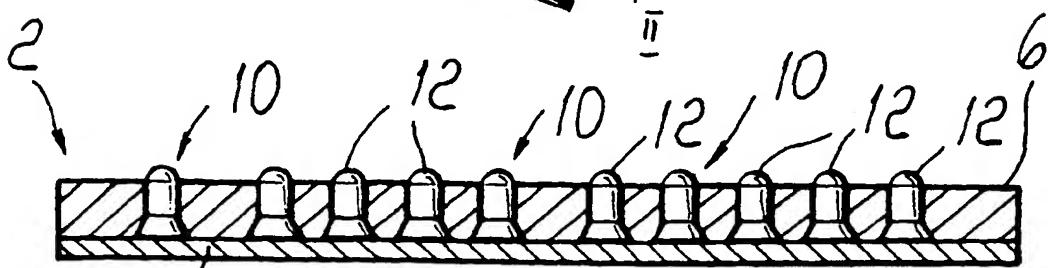
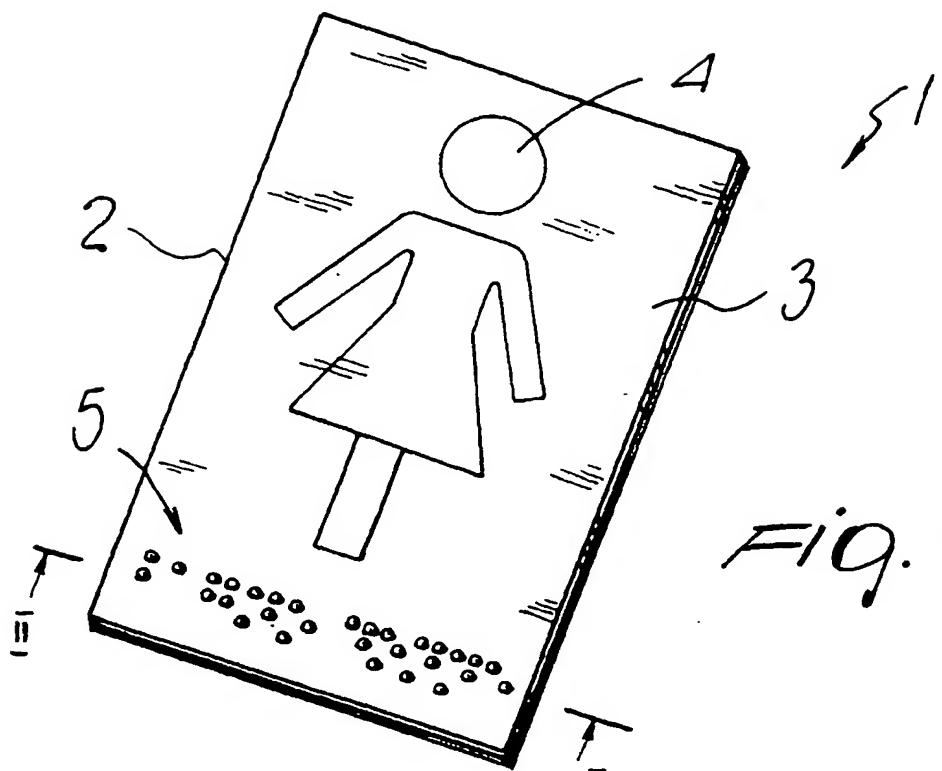
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Claims

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1. An indicator device characterized in that it comprises a support member (2) having a plurality of holes (8) engaged by protruding pins (10) which are detectable to the touch. 25
2. A device according to claim 1, characterized in that said support member (2) comprises an exposed panel (6) which is associated with a closure panel (7), said holes (8) being through holes in said exposed panel (6). 30
3. A device according to claim 2, characterized in that said through holes (8) in said first panel (6) comprise a flared or wider portion (9) at the interface between said panels (6, 7). 35
4. A device according to claim 1, characterized in that said pins (10) comprise a cylindrical stem (11), a dome-shaped rounded end (12) and an opposite end (13) which is shaped as a cone or as a wider cylindrical head. 40
5. A device according to claim 4, characterized in that said pins (10) are made of synthetic material in various colors, said material being resistant to abrasion and to rubbing-induced wear. 45
6. A method for manufacturing an indicator device, characterized in that it comprises the steps of: 50
 - producing a plurality of through holes (8) on an exposed panel (6);
 - inserting a plurality of pins (10) into said through holes (8), said pins (10) protruding with one end from said exposed panel (6);
 - locking said pins (10) by means of a closure panel (7), coupling it to said exposed panel (6).





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EUROPEAN SEARCH REPORT

Application Number
EP 99 11 9830

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim			
X	US 5 720 616 A (SCHULER III GEORGE) 24 February 1998 (1998-02-24) * the whole document *	1,2,4,6	G09B21/00		
A	FR 2 590 481 A (GERLAND) 29 May 1987 (1987-05-29) * page 2, line 12 - page 4, line 31; claims 1,2,4,6; figures 1-3 *	1,3-6			
A	FR 2 669 848 A (SODICA DISTR COMPOSANTS AS) 5 June 1992 (1992-06-05) * page 2, line 1 - page 2, line 21; claims 1,2; figures 1-3 *	1,2			
A	GB 2 263 354 A (ADDISON ANTHONY GRAHAM ;FLINT KEITH JAMES (GB)) 21 July 1993 (1993-07-21) * the whole document *	1			
A	US 5 403 189 A (EDGERTON DAVID A) 4 April 1995 (1995-04-04) * claims 1-3; figures 10-16 *	1,2	<table border="1"> <tr> <td>TECHNICAL FIELDS SEARCHED (Int.Cl.7)</td> </tr> <tr> <td>G09B</td> </tr> </table>	TECHNICAL FIELDS SEARCHED (Int.Cl.7)	G09B
TECHNICAL FIELDS SEARCHED (Int.Cl.7)					
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<p>The present search report has been drawn up for all claims</p>					
Place of search EPO FORM 1503/03-82 (P04C01)	Date of completion of the search 3 February 2000	Examiner Gorun, M			
CATEGORY OF CITED DOCUMENTS		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document</p>			
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EP 99 11 9830

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03-02-2000

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5720616	A	24-02-1998		NONE		
FR 2590481	A	29-05-1987		NONE		
FR 2669848	A	05-06-1992		NONE		
GB 2263354	A	21-07-1993		NONE		
US 5403189	A	04-04-1995	US	5245744	A	21-09-1993

EPO FORM P0550

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